

IN THE CLAIMS:

Claim 1 (Currently Amended): A deep bass sound booster device, that receives left-channel and right-channel input sound signals and performs sound reproduction therefrom in stereo when either reproduction with loudspeakers or reproduction with headphones is selected, comprising:

left-channel and right-channel high-pass filters to which the left-channel and the right-channel input sound signals are fed respectively, the high-ass filters having high-pass characteristics in which only frequency components higher than a predetermined frequency are allowed to pass through for outputting;

a bass booster for amplifying only frequency components lower than the predetermined frequency of signals resulted from adding the left-channel and the right-channel input sound signals together, and attenuating other frequency components for outputting;

a left-channel adder capable of adding two left-channel signals together and outputting resultant signals, the two left-channel signals being output signals from the left-channel high-pass filter and output signals from the bass booster;

a right-channel adder capable of adding two right-channel signals together and outputting resultant signals, the two right-channel signals being output signals from the right-channel high-pass filter and output signals from the bass booster; [[and]]

a left-channel switch having ON and OFF states, arranged between the left-channel adder and an output side of the bass booster, for forming, in the ON state thereof, a signal path through which the output signals from the bass booster are fed to the left-channel adder; and

a right-channel switch having ON and OFF states, arranged between the right-channel adder and the output side of the bass booster, for forming, in the ON state thereof, a signal path through which the output signals from the bass booster are fed to the right-channel adder,
wherein, switching means for forming a first signal path when the reproduction with loudspeakers is selected, the left-channel and the right-channel switches are brought to the OFF state so that and forming a second signal path when the reproduction with headphones is selected, wherein, when the first signal path is formed, the output signals [[of]] from the left-channel and the right-channel high-pass filters are fed to left and right loudspeakers intact respectively, and the output signals [[of]] from the bass booster are fed to a bass loudspeaker, and,

when the second signal path is formed, the reproduction with headphones is selected, the left-channel and the right-channel switches are brought to the ON state so that the two left-channel signals are added together by the left-channel adder so as to be fed to a left side of the headphones, and the two right-channel signals are added together by the right-channel adder so as to be fed to a right side of the headphones.

Claim 2 (Currently Amended): A deep bass sound booster device as claimed in claim 1, further comprising a connector to which the headphones are connected,
wherein[[,]] the connector is provided with the left-channel and the right-channel switches;

when the headphones are connected to the connector, in an interlocking manner, the left-channel and the right-channel switches are brought to the ON state respectively; and

~~the switching means forms the second signal pass for the reproduction with headphones by way of contacts provided in the connector, and~~

when the headphones are disconnected from the connector, in an interlocking manner, the switching means forms the first signal pass for the reproduction with loudspeakers by way of the contacts provided in the connector the left-channel and the right-channel switches are brought to the OFF state respectively.

Claim 3 (Currently Amended): A deep bass sound booster device, as claimed in claim 1, further comprising level adjusting means for adjusting a level of signals fed to the bass booster,

wherein the left-channel and the right-channel high-pass filters have the high-pass characteristics and flat characteristics of which one can be selected, and

when the headphones are used to reproduce sound and when the level of signals fed to the bass booster is muted by the level adjusting means, the flat characteristics are selected, and

when the headphones are used to reproduce sound and when the level of signals fed to the bass booster is not muted by the level adjusting means, the high-pass characteristics [[is]] are selected.

Claim 4 (Currently Amended): A deep bass sound booster device as claimed in claim 3, wherein, when the loudspeakers are used to reproduce ~~sound, the level adjusting means is arranged in a way that the level of the signals fed to the bass booster is prevented from going below a point at which an output signal level of the bass booster becomes lower than sound and when the level of signals fed to the bass booster is turned down, the level adjusting means is prevented from turning down the level of signals fed to the bass booster any further when a level of the output signals of the bass booster falls below a level of the input sound signals.~~

Claim 5 (Currently Amended): A deep bass sound booster device, that receives left-channel and right-channel input sound signals and performs sound reproduction therefrom in stereo when one of reproduction with loudspeakers and reproduction with headphones is selected, comprising:

left-channel and right-channel high-pass filters to which the left-channel and the right-channel input sound signals are fed respectively, the high-pass filters having high-pass characteristics in which only frequency components higher than a predetermined frequency are allowed to pass through for outputting;

left-channel and right-channel bass ~~booster~~ boosters to which the left-channel and the right-channel input sound signals are fed respectively, amplifying only frequency components lower than the predetermined frequency, and attenuating other frequency components for outputting;

a bass adder for adding output signals from the left-channel bass booster and output signals from the right-channel bass booster together and outputting resultant signals;

a left-channel adder capable of adding two left-channel signals together and outputting resultant signals, the two left-channel signals being output signals from the left-channel high-pass filter and output signals from the left-channel bass booster;

a right-channel adder capable of adding two right-channel signals together and outputting resultant signals, the two right-channel signals being output signals from the right-channel high-pass filter and output signals from the right-channel bass booster; [[and]]

a left-channel switch having ON and OFF states, arranged between the left-channel adder and an output side of the left-channel bass booster, for forming, in the ON state thereof, a signal path through which the output signals from the left-channel bass booster are fed to the left-channel adder; and

a right-channel switch having ON and OFF states, arranged between the right-channel adder and an output side of the right-channel bass booster, for forming, in the ON state thereof, a signal path through which the output signals from the right-channel bass booster are fed to the right-channel adder,

wherein, switching means for forming a first signal path when the reproduction with loudspeakers is selected, the left-channel and the right-channel switches are brought to the OFF state so that and forming a second signal path when the reproduction with headphones is selected, wherein, when the first signal path is formed, the output signals [[of]] from the left-channel and the right-channel high-pass filters are fed to left and right loudspeakers intact respectively, and output signals of the bass adder are fed to a bass loudspeaker, and,

when the second signal path is formed, the reproduction with headphones is selected, the left-channel and the right-channel switches are brought to the ON state so that the two left-channel signals are added together by the left-channel adder so as to be fed to a left side of the

headphones, and the two right-channel signals are added together by the right-channel adder so as to be fed to a right side of the headphones.

Claim 6 (Currently Amended): A deep bass sound booster device as claimed in claim 5, further comprising a connector to which the headphones are connected,

wherein[[],] the connector is provided with the left-channel and the right-channel switches;

when the headphones are connected to the connector, in an interlocking manner, the left-channel and the right-channel switches are brought to the ON state respectively; and

~~the switching means forms the second signal pass for the reproduction with headphones by way of contacts provided in the connector, and~~

when the headphones are disconnected from the connector, in an interlocking manner, the switching means forms the first signal pass for the reproduction with loudspeakers by way of the contacts provided in the connector, the left-channel and the right-channel switches are brought to the OFF state respectively.

Claim 7 (Currently Amended): A deep bass sound booster device as claimed in claim 5, further comprising level adjusting means for adjusting a level of signals fed to the left-channel and the right-channel bass boosters,

wherein the left-channel and the right-channel high-pass filters have the high-pass characteristics and flat characteristics of which one can be selected, and

when the headphones are used to reproduce sound and when the level of signals fed to the left-channel and the right-channel bass boosters is [[not]] muted by the level adjusting means, the flat characteristics [[is]] are selected, and

when the headphones are used to reproduce sound and when the level of signals fed to the left-channel and the right-channel bass boosters is not muted by the level adjusting means, the high-pass characteristics [[is]] are selected.

Claim 8 (Currently Amended): A deep bass sound booster device as claimed in claim 7, wherein, when the loudspeakers are used to reproduce ~~sound, the level adjusting means is arranged in a way that the level of the signals fed to the left channel and the right channel bass boosters is prevented from going below a point at which an output signal level of the left channel and the right channel bass boosters becomes lower than sound and when the level of signals fed to the left-channel and the right-channel bass boosters is turned down, the level adjusting means is prevented from turning down the level of signals fed to the left-channel and the right-channel bass boosters any further when a level of the output signals of the left-channel and the right-channel bass boosters falls below a level of the input sound signals.~~